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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,765	02/04/2004	Roko S. Bujas	1303-095 81676/0703	5701

22242 7590 06/01/2006

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EXAMINER	
CHRISTENSEN, RYAN S	
ART UNIT	**PAPER NUMBER**
2856	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/772,765	BUJAS ET AL.	
	Examiner	Art Unit	
	Ryan Christensen	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/01/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19-21* is/are allowed.

6)☒ Claim(s) *1-4,6-9,11-16 and 18* is/are rejected.

7)☒ Claim(s) *5 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/11/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 8, 9, 11, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,590,634 (Pasternak et al.) in view of U.S. Patent 3,999,066 (Osborne et al.) and U.S. Patent 3,498,110 (Brun) and U.S. Patent 6,413,645 (Graff et al.).

Pasternak et al. disclose mounting a sample through which permeation is to be measured (membrane 31, Fig. 2), providing controlled access to a chamber upstream (upstream compartment, 27, Fig. 2) of the sample and downstream (downstream compartment, 63, Fig. 2) of the sample. Pasternak et al. disclose supplying a gas (permeant gas) in contact with the upstream surface of the sample (Col.1, lines 45-55), collecting the permeant gas with a carrier gas (helium) by circulating the carrier gas downstream very slowly (.5 ml/sec, Col. 4, 35-43), and flowing the permeant to a radiation detector (Col. 2, lines 61-64). Pasternak et al. disclose continuously monitoring a detector for the permeant gas (Col. 3, lines 55-62). Pasternak et al. disclose receiving signals from the detector and determining permeation rates (Col. 2, lines 59-71). Pasternak et al. do not explicitly disclose the permeant gas being a radioactive gas, but do disclose a radioactive counter as a known detector in the art for this system (Col. 2,

lines 61-64). The radiation detector implies a radioactive gas because it is useful to detect permeability when the permeant gas is a radioactive gas.

Pasternak et al. do not explicitly disclose an ionic chamber that is no more than 2 liters in volume and contains a beta particle radiation monitor. Nor do Pasternak et al. explicitly disclose the downstream chamber having a volume less than $10cm^3$. And finally, Pasternak et al. do not explicitly disclose a method of measuring permeability for samples having permeation rates of 0.0001 gm/m^2/ day or less.

Osborne et al. disclose a radiation counter being a beta radiation detector (10, Fig. 1 and Col. 1, 59-65). Brun discloses a downstream chamber less than $10cm^3$ (recess, Col. 3, lines 19-30). Graff et al. disclose that Organic Light Emitting Devices (OLEDs) require encapsulation in materials with permeation rates less than 0.0001 gm/m^2/ day (Col. 1, lines 26-31) and these encapsulations often contain polymeric films (Col. 1, lines 22-40).

With respect to claim 1, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught in Pasternak et al. with the teachings of Osborne et al., Brun, and Graff et al. by employing a beta particle detector with in an ionic chamber no larger than 2 liters as suggested by Osborne et al., limiting the downstream chamber to less than $10cm^3$ as taught in Brun, and using the method on materials with permeation rates less than .0001 gm/m^2/ day such as encapsulating materials for organic Light Emitting Devices as suggested by Gaff et al.

Pasternak et al. suggest a radiation counter. Beta detectors are well known in the art for this purpose. There is no explicit teaching in either Pasternak et al. or Osborne

et al. that the beta detector be located in an ionic chamber no more than 2 liters in volume. However, in Osborne et al. gas flows to the beta detector that is either contained within an ionic chamber or comprises an ionic chamber in order to contain the radioactive gas during measurement. It would have been obvious to size the chamber to 2 liters or less in order to accurately detect the radioactive gas because Pasternak et al. disclose the carrier gas, which carries the radioactive gas from the downstream surface of the sample to the chamber, has a very slow flow rate (.5 ml/sec, Col. 4, 35-43). A smaller volume naturally follows from the slower flow rate to increase the sensitivity of the beta detector. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

It would have been obvious to limit the size of the downstream chamber to less than $10cm^3$ in order to increase sensitivity and reduce the time required to make measurements (Brun, Col. 5, lines 40-43).

It would have been obvious to use the method on samples with permeation rates as low as 0.0001 gm/m^2/ day or less because Graff et al. disclose Organic Light Emitting Devices (OLEDs) require encapsulation in materials with permeation rates less than 0.0001 gm/m^2/ day.

With respect to claim 8, Pasternak et al. disclose the carrier gas entering at a pressure not greater than about 1.1 atm (Col. 1, lines 46-55).

With respect to claim 9, Graff et al. disclose polymeric films are used in moisture barriers (Col. 1 line 61 to Col. 2, line 3). It would have been obvious to one of ordinary

skill in the art at the time of the invention to modify the method by providing a sample that is a polymeric film because polymeric films are known in the art for moisture barriers and their permeability to water vapor is a property of interest (Table 1).

With respect to claim 11, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught in Pasternak et al. with the teachings of Osborne et al., and Brun by employing a beta particle detector with in an ionic chamber no larger than 2 liters as suggested by Osborne et al., limiting the downstream chamber to less than $10cm^3$ as taught in Burn.

Pasternak et al. suggest a radiation counter. Beta detectors are well known in the art for this purpose. There is no explicit disclosure in either Pasternak et al. or Osborne et al. that the beta detector be located in an ionic chamber no more than 2 liters in volume. However, in Osborne et al. gas flows to the beta detector that is either contained within an ionic chamber or comprises an ionic chamber in order to contain the radioactive gas undergoing measurement. It would have been obvious to size the chamber to 2 liters or less, in order to accurately detect the radioactive gas because Pasternak et al. the carrier gas, which carries the radioactive gas from the downstream surface of the sample to the chamber, has a very slow flow rate (.5 ml/sec, Col. 4, 35-43). A smaller volume for the chamber naturally follows from the slower flow rate to increase the sensitivity of the beta detector. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

It would have been obvious to limit the size of the downstream chamber to less than $10cm^3$ in order to increase sensitivity and reduce the time required to make measurements (Brun, Col. 5, lines 40-43).

The sensitivity of the device allowing measurement of samples with permeation rates less than 0.0001 gm/m^2/ day is not considered a positive limitation in claim 11 because the sample worked upon is not a limitation in an apparatus claim. See MPEP 2115.

With respect to claim 15, sampling a polymeric film is not considered a positive limitation because the sample worked upon is not a limitation in an apparatus claim. See MPEP 2115.

With respect to claim 16, Pasternak et al. disclose a mounting means including a third chamber (110, Fig. 1) which surrounds the periphery of said mounted film composite (annular grove) and wherein said carrier gas circulating means can circulate slow flow of carrier gas through said third chamber (Fig. 1, 110 and Col. 4, lines 19-25).

Claims 2, 3, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,590,634 (Pasternak et al.) in view of U.S. Patent 3,999,066 (Osborne et al.) and U.S. Patent 3,498,110 (Brun) and U.S. Patent 6,413,645 (Graff et al.) as applied to claim 1 above, and further in view of U.S. Patent 3,580,067 (Mandrell et al.).

With respect to claim 2, the combination as applied to claim 1, does not explicitly disclose that the radioactive gas being tritiated water vapor (HTO). However, Mandrell

et al. disclose a system for measuring film porosity with a radioactive gas where the radioactive gas is tritiated water vapor (HTO). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught by the combination as applied to claim 1 by using tritiated water vapor (HTO) in order to determine the permeability of the sample to water vapor (Col. 1, lines 59-72).

With respect to claim 3 and 14, the combinations applied against claims 1 and 11 respectively, do not explicitly disclose tritiated water vapor (HTO) being supplied to the chamber upstream of the sample at a humidity between 85 and 100% throughout the entire test period. Mandrell et al. disclose controlling the relative humidity for a predetermined time/through the testing period (Col. 1, lines Col. 1, lines 59-72) as well as another instrument that uses 100% humidity on the upstream side of the sample (Col. 1, lines 17-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught by the combination as applied to claim 1, by keeping a constant relative humidity between 85 and 100% because it has been held where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to claim 4, Mandrell discloses the radioactive gas is tritiated water vapor (HTO) and the carrier gas is methane (Col. 1, lines 34-43).

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,590,634 (Pasternak et al.) in view of U.S. Patent 3,999,066 (Osborne et

al.) and U.S. Patent 3,498,110 (Brun) and U.S. Patent 6,413,645 (Graff et al.) as applied to claim 1 above, and further in view of U.S. Patent 5,390,539 (Mayer).

The combination as applied to claim 1, does not explicitly disclose the carrier gas being argon. Mayer discloses the carrier gas being argon (Col. 2, lines 44-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination as applied to claim 1, because argon is a suitable carrier gas known in the art and it is an inert gas making is a relatively safe gas to work with.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,590,634 (Pasternak et al.) in view of U.S. Patent 3,999,066 (Osborne et al.) and U.S. Patent 3,498,110 (Brun) and U.S. Patent 6,413,645 (Graff et al.) as applied to claim 1 above, and further in view of U.S. Patent 4,049,405 (Goldsmith et al.).

Pasternak et al. disclose maintaining a low pressure differential to between the upstream and downstream chambers (Col. 1, lines 46-55) Pasternak et al. disclose venting the carrier gas to atmosphere (Col. 3, lines 72-75). Pasternak et al. also disclose a value separating (23, 24, 25) the radioactive gas from the first chamber (Col. 3, line 33-44 and Fig. 1) Neither Pasternak et al. nor the combination applied to claim 1, expressly disclose venting the to atmosphere after passing through an absorption device for removing the radioactive compound from the gas stream. Goldsmith et al. disclose a radioactive absorption device (filter) for removing a radioactive compound from a gas stream (abstract).

With respect to claim 7, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclose by Pasternak et al. by

removing harmful compounds from the gas stream before venting with a radioactive absorption device (filter) as disclosed by Goldsmith et al. Pasternak et al. suggest a radioactive compound can be used in its operation, but does not detail the handling of the radioactive gas. It would be obvious to isolate a radioactive compound so it can be safely disposed of.

With respect to claim 12, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Pasternak et al. by removing harmful compounds from the gas stream before venting with a radioactive absorption device (filter) as disclosed by Goldsmith et al. Pasternak et al. suggest a radioactive compound can be used in its operation, but does not detail the handling of the radioactive gas. It would be obvious to isolate a radioactive compound so it can be safely disposed of.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,590,634 (Pasternak et al.) in view of U.S. Patent 3,999,066 (Osborne et al.) and U.S. Patent 3,498,110 (Brun) and U.S. Patent 6,413,645 (Graff et al.) and U.S. Patent 4,049,405 (Goldsmith et al.) as applied to claim 12 above, and in further view of U.S. Patent 5,390,539 (Mayer).

The combination as applied to claim 12 discloses valves for separating the radioactive gas from the first chamber as well as a filter for separating radioactive compounds, but does not expressly disclose means for directing a purge gas to remove radioactive gas and direct it to the removal station.

Mayer discloses a purge system for running pure carrier gas through the system (Col. 3, line 65 to Col. 4, line 10 and Fig. 2), which serves to remove any lingering permeant/radioactive gas in the system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught by the combination as applied to claim 12 by including a means for purging the system in order to remove the permeant/radioactive gas to increase accuracy and reliability of subsequent measurements.

Allowable Subject Matter

Claims 5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 19-21 are allowed.

Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,655,192 (Chavdar) discloses testing lateral permeability in porous materials.

U.S. Patent 6,993,956 (Bouten et al.) discloses a method for testing permeability that can be used to determine permeability of seals or seal rims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Christensen whose telephone number is 571-272-2683. The examiner can normally be reached on Monday - Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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